

AMENDMENTS TO THE CLAIMS

1. (Withdrawn) A non-human transgenic organism comprising a transgenic element that engenders therein production of a prothrombin or prothrombin-related polypeptide.

2 – 4. (Canceled)

5. (Withdrawn) A transgenic organism according to claim 1, wherein the prothrombin or prothrombin-related polypeptide therein produced accumulates in a specific tissue compartment, fluid or product of the transgenic organism.

6. (Withdrawn) A transgenic organism according to claim 5, wherein the transgenic organism is a non-human mammal.

7. (Withdrawn) A transgenic organism according to claim 6, wherein the mammal is mouse, rat, hamster, rabbit, pig, sheep, goat, cow or horse.

8. (Withdrawn) A transgenic organism according to claim 6, wherein the organism is female and the polypeptide accumulates in milk.

9-10. (Canceled)

11. (Withdrawn) A transgenic organism according to claim 1, wherein the prothrombin or prothrombin-related polypeptide produced in the organism when isolated and purified has a specific activity is 75% to 125% of that of purified human prothrombin.

12. (Withdrawn) A transgenic organism according to claim 11, wherein activity is determined by a chromatographic assay of amidolytic activity or by APTT assay.

13. (Withdrawn) A transgenic organism according to claim 1, wherein the prothrombin or prothrombin related polypeptide comprises a region having an amino acid sequence 80% to 100% identical to that of a mammalian thrombin.

14-15. (Canceled)

16. (Withdrawn) A transgenic organism according to claim 13, wherein the prothrombin or prothrombin-related polypeptide comprises a region having the amino acid sequence of human thrombin.

17. (Withdrawn) A transgenic organism according to claim 1, wherein the prothrombin or prothrombin-related polypeptide comprises a region having an amino acid sequence 80% to 100% identical to that of a mammalian prothrombin.

18-19. (Canceled)

20. (Withdrawn) A transgenic organism according to claim 17, wherein the prothrombin or prothrombin-related polypeptide comprises a region having the amino acid sequence of human prothrombin.

21. (Canceled)

22. (Withdrawn) A transgenic organism according to claim 11, wherein the transgenic element comprises a promoter operatively linked to a region encoding prothrombin or a prothrombin-related polypeptide, wherein further the promoter is selected from the group consisting of the promoters of whey acidic protein genes, casein genes, lactalbumin genes and beta lactoglobulin genes.

23. (Canceled)

24. (Withdrawn) A transgenic organism according to claim 17, wherein the transgenic element comprises a promoter operatively linked to a region encoding prothrombin or a prothrombin-related polypeptide, wherein further the promoter is selected from the group consisting of the promoters of whey acidic protein genes, casein genes, lactalbumin genes and beta lactoglobulin genes.

25. (Withdrawn) A transgenic organism according to claim 11, wherein the promoter is the mouse long whey acidic protein promoter.

26. (Canceled)

27. (Withdrawn) A transgenic organism according to claim 17, wherein the promoter is the mouse long whey acidic protein promoter.

28 - 39. (Canceled).

40. (Currently Amended) A composition, comprising milk derived from a transgenic mammal and a recombinant transgenic polypeptide wherein said polypeptide comprises a completely γ -carboxylated Gla domain and a first amino acid sequence, wherein said first sequence is ~~at least 70%~~ identical to a human prothrombin amino acid sequence.

41. (Canceled)

42. (Previously Presented) The composition of Claim 40, wherein polypeptide comprises a post-translational modification selected from the group consisting of glycosylation and proteolytic processing.

43. (Canceled)

44. (Currently Amended) The composition of Claim 40, wherein said polypeptide further comprises a second amino acid sequence, wherein said second sequence is ~~at least 80% to 100%~~ identical to a mammalian thrombin amino acid sequence.

45. (Canceled)

46. (Previously Presented) The composition of Claim 44, wherein said mammalian thrombin comprises human thrombin.

47-52. (Canceled)

53. (Withdrawn) A method for treating a wound in a patient comprising a step of administering to said patient a composition according to claim 40.

54-55. (Canceled)

56. (Previously Presented) The composition of Claim 42, wherein said proteolytic processing comprises enzymatic cleavage selected from the group consisting of Factor Xa, Factor Va, venom protease, thrombin, and combinations thereof.
57. (Previously Presented) The composition of Claim 42, wherein said proteolytic processing comprises chemical activation selected from the group consisting of sodium citrate, protamine sulfate, polylysine, and combinations thereof.
58. (Previously Presented) The composition of Claim 42, wherein said proteolytic processing comprises, in combination, Factor Xa, Factor Va, calcium, and phospholipids.
59. (Withdrawn) A method, comprising:
- a) providing:
 - i) a transgenic organism capable of producing milk;
 - ii) a genetic construct stably incorporated into a mammary cell of said organism, wherein said construct encodes a recombinant polypeptide, comprising a Gla domain, and an amino acid sequence, wherein said sequence is at least 70% identical to a human prothrombin, wherein said Gla domain is capable of becoming completely γ -carboxylated by said organism;
 - b) secreting said recombinant polypeptide into said milk by said mammary cell; and
 - c) collecting said milk from said transgenic organism.
60. (Canceled)
61. (Currently Amended) The composition of Claim 40, wherein said first amino acid sequence is ~~at least~~ 100% identical to said human prothrombin amino acid sequence, wherein upon activation said prothrombin sequence is capable of being converted into thrombin.